RECEIVED
CENTRAL FAX CENTER

OCT 0 5 2006

MS APPEAL BRIEF - PATENTS
Docket No.: 3655/0138P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Emek SADOT

Application No.: 10/072,364 Confirmation No.: 2558

Filed: February 6, 2002 Art Unit: 2194

For: CLIENT-CONTROLLED LOAD BALANCER Examiner: C. E. Anya

BRIEF ON BEHALF OF APPELLANT

10/05/2006 TL0111 00000082 10072364
02 FC:1402 500.00 OP

RECEIVED
CENTRAL FAX CENTER

OCT 0 5 2006

MS APPEAL BRIEF - PATENTS
Docket No.: 3655/0138P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Emek SADOT

Application No.: 10/072,364 Confirmation No.: 2558

Filed: February 6, 2002 Art Unit: 2194

For: CLIENT-CONTROLLED LOAD BALANCER Examiner: C. E. Anya

BRIEF ON BEHALF OF APPELLANT

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an Appeal from the Rejection of Claims 1-51 in the above-identified application, which claims were finally rejected in the Office Action dated January 5, 2006.

I. REAL PARTY IN INTEREST

AVAYA COMMUNICATION ISRAEL LTD. IS THE ASSIGNEE OF THE PRESENT APPLICATION AND THE REAL PARTY IN INTEREST.

II. RELATED APPEALS AND INTERFERENCES

None

III. STATUS OF THE CLAIMS

Claims 1-51 have been finally rejected by the Examiner in connection with the above-identified application. Claims 1-51 are set forth in the attached Appendix.

IV. STATUS OF AMENDMENTS

The Amendment after Final Rejection that was filed on June 29, 2006 has not been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed subject matter relates to a method that includes providing a load balancer not associated with the virtual server and in which the load balancer includes a client-controlled load balancer (102) that directly selects one of the plurality of servers (108) representing the virtual server based on one or more parameters provided by the load balancer. (See Fig. 1).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-7, 12-15, 17, 41, 42 and 44 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub. No. 2001/0047415 A1 (Skene et al., hereinafter "Skene") in view of U.S. Patent No. 6,400,681 (Bertin et al., hereinafter "Bertin"), and further in view of U.S. Patent No. 6,182, 139 (Brendel, hereinafter "Brendel").

Claims 8-11, 16, 18-23, 37-40, 43, 45 and 47-51 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Skene in view of Bertin, and further in view of Brendel as applied to claim 6, and further in view of U.S. Patent No. 6,249,801 (Zisapel et al., hereinafter "Zisapel").

Claims 24-36 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Skene in view of U.S. Pub. No. 2003/01102293 (Friedman et al., hereinafter "Friedman") and further in view of Brendel.

Claims 46 stands finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Skene in view of Bertin, and further in view of Brendel as applied to claim 41, and further in view of U.S. Patent Application S.N. 09/793,455 identified on page 14 of the specification.

VII. APPELLANTS' ARGUMENTS

A. Grouping of Claims

Claims 1, 24, 37, 41 and 47 are independent, and the patentability of dependent claims 2-23, 25-36, 38-40, 42-45 and 48-51 raises or falls with the patentability of their respective independent claims. The patentability of dependent claim 46 should be determined separately.

B. The Rejection of Independent Claims 1, 24, 37, 41 and 47 Under 35 U.S.C. § 103(a)

1. The Relationship of Independent Claims 1, 24, 37, 41 and 47

Claims 1, 24, 37, 41 and 47 are independent. Independent claims 1, 24, 37 and 47 are directed to methods for selecting a server, and independent claim 41 is directed to a load balancer. Independent claim 1 recites that "the load balancer comprises a client-controlled load balancer that directly selects said one of the plurality of servers

representing the virtual server based on said one or more parameters". Independent claims 24, 37, 41 and 47 all include similar limitations.

Independent claim 1, for example, is directed to a method of selecting a server to represent a virtual server hosted by a plurality of servers. The method includes providing a client-controlled load balancer that is not associated with the virtual server and that directly selects one of the plurality of servers representing the virtual server based on one or more parameters provided by the load balancer. Thus, according to the present invention, the client-controlled load balancer is able to make an intelligent decision as to which virtual server would best serve the client.

2. The Hypothetical Combination of References Is Not the Claimed Invention

In rejecting the independent claims as being unpatenable, the Office Action relies on the primary reference by Skene as teaching the claimed load balancer and in particular cites the EDNS server 160 in Figure 1 as corresponding to the claimed load balancer of the present invention. For the convenience of the reader, Fig. 1 of Skene is reproduced below:

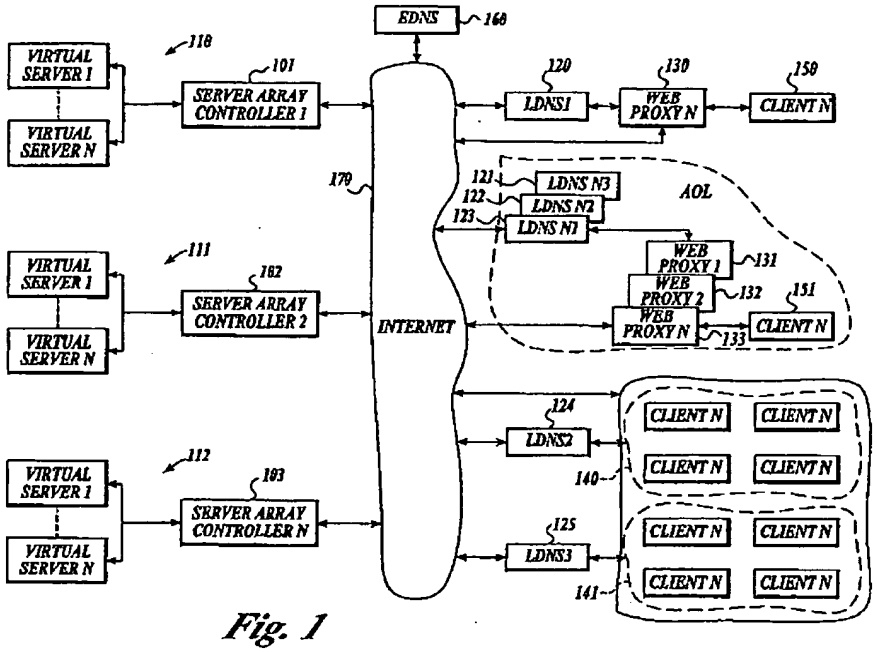

Fig. 1

The Office Action further relies on the secondary reference by Brendel as teaching a client-controlled load balancer that directly selects a server based on one or more parameters. The Office Action also indicates that it would have been obvious to one of ordinary skill in the art ... to combine Brendel ... and Skene et al. ... to improve the overall performance of the Internet and/or WAN links. However, combining Brendel with Skene would only cause the client 150 of Skene to select a Server Array Controller (SAC) 101, 102, 103, which then selects a particular virtual server 110, 111, 112.

It is respectfully submitted the EDNS server 160 of Skene, which allegedly corresponds to the claimed load balancer, only determines which server array controller SAC 101, 102 and 103 to select. Then, the SAC 101, 102 or 103 decides which virtual server 1 ... N is selected (see also paragraph [0028] – [0035], for example). Skene, therefore, is similar to the background art discussed in the present application in which

a server array controller (SAC) which is not controlled by the client ultimately determines which server to select. That is, the server array controller 101, 102, 103 in Skene determines which server to use. There is no teaching that the load balancer or EDNS 160 of Skene performs this function. This differs from the present application in which a client-controlled load balancer allows the client to determine how a server is to be selected, rather than having this determination performed by the manager of a particular website (see page 2, lines 25-27 of the present application, for example). The additional secondary references by Bertin et al., Friedman et al., Zisapel et al. and Brendel et al. also do not teach or suggest a client-controlled load balancer which is able to make an intelligent decision as to which virtual server would best serve the client.

In other words, the EDNS server 160 of Skene only determines which server array controller SAC 101, 102 and 103 to select. The EDNS server 160 does not select a virtual server. Then, the SAC 101, 102 or 103 decides which virtual server 1 ... N is selected (see also paragraph [0028] – [0035], for example). Accordingly, moving the operations of the EDNS server 160 of Skene to the client 150 of Skene based on the teachings of Brendel would result in a hypothetically modified system which is not the claimed invention. In the Examiner's hypothetically modified system, the client 150 still selects a particular SAC 101, 102, 103, instead of the EDNS server 160 selecting a virtual server. This is because Brendel teaches that multiple connection packets should be sent to different servers, and then the client is connected to the first server that responds. This is often referred to in the art as "Spray and Pray." Thus, the hypothetical combination of Brendel with Skene would result in the client 150 sending

out packets to each SAC 101, 102, 103, and then selecting the SAC 101, 102, 103 that first responds. The selected SAC would then determine what virtual server 110 to select. Accordingly, the hypothetical combination including Skene and Brendel is not the Applicant's claimed invention.

It is respectfully submitted that the additional secondary references alone or in combination also do not teach or suggest the claimed client-controlled load balancer of independent claims 1, 24, 37, 41 and 47 that directly selects one of the plurality of servers representing the virtual server.

3. The Alleged Motivation to Combine References

It is respectfully submitted that one skilled in the art would not be motivated to combine the teachings of the Skene and Brendel, and that there is insufficient motivation to combine the references as suggested in the Office Action. See, *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed. Cir. 1985) ("When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself."). Applicant respectfully submits that the Examiner has impermissibly used hindsight gleaned from the Applicant's application to combine the references, and that the alleged motivation identified in the Office Action is legally insufficient

According to the January 5, 2006 Office Action, the alleged motivation to combine references is that the teachings of Brendel "would improve the system of Bertin and Skene by minimizing the client latency, since minimal latency paths tend to

go around Internet bottlenecks and as result improves the overall performance of the Internet and/or WAN links. (Brendel Col 3, lines 10-17). Minimizing latency paths and improving overall performance may be desirable goals, but desirable goals and conclusory statements do not provide a concrete suggestion or motivation to combine references. Rejections on obviousness grounds cannot be sustained by mere conclusory statements, and there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *In re Lee*, 277 F.3d 1338, 1343-46 (Fed. Cir. 2002), and *In re Rouffet*, 149 F.3d 1350, 1355-59 (Fed. Cir. 1998). Accordingly, Applicant respectfully disagrees that the teachings of Brendel provide any motivation to modify the teachings of the Skene, and the only possible motivation to combine the references is gleaned from the hindsight provided by the Applicant.

In addition, Skene's teachings described above regarding the selection of SACs 101, 102, 103 can not be ignored because they are one of the main points of the Skene reference. If the proposed modification was made, it would render Skene's SAC's unsatisfactory for their intended purpose. There is no suggestion or motivation to make a proposed modification to a prior art reference, when the proposed modification renders the reference unsatisfactory for its intended purpose. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

It is clear that Skene and Brendel, either alone or in combination with the other cited prior art, do not disclose the recited features nor provide the necessary motivation to combine references. Accordingly, Applicant respectfully submits that the

independent claims 1, 24, 37, 41 and 47 are patentable over the cited prior art, and the Examiner's rejection must be overturned.

C. Dependent Claim 46 – The Allegedly APA is Not Prior Art

The allegedly Admitted Prior Art ("APA'), that has been used to reject clam 46, is U.S. Patent Application 09/793,455 which was filed on February 26, 2001, and it is assigned to the Assignee of the present invention. The allegedly APA was first published on August 29, 2002. The present application was filed on February 6, 2002, and it is assigned to the same assignee as the allegedly APA. [See Appendix IX for Assignment Data.] It is respectfully submitted that the allegedly APA is not prior art under 35 U.S.C. § 103(c) which states:

> (c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Accordingly, the Examiner's rejection of claim 46 based upon 35 U.S.C. § 103 must be overturned, because the allegedly APA is not prior art with respect to the claimed invention.

D. Conclusion

The required Appeal Brief Fee in the amount of $500 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3828 for

any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: October 5, 2006

Respectfully submitted,

By Reg. No. 39,195
for Scott L. Lowe
Registration No.: 41,458
McGRATH, GEISSLER, OLDS & RICHARDSON, PLLC
10560 Main Street
Suite 213
P.O. Box 1364
Fairfax, Virginia 22038
(703) 621-7140
Attorney for Applicant

VIII. Claims Appendix

CLAIMS APPEALED

1. A method of selecting a server to represent a virtual server hosted by a plurality of servers, comprising:

providing, by a load balancer not associated with the virtual server, values, for one or more parameters, of two or more paths, each path defined between a point in a vicinity of a client accessing the virtual server and one of the plurality of servers representing the virtual server; and

selecting a server to provide data for the client, responsive to the values of the one or more parameters,

wherein the load balancer comprises a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters.

2. A method according to claim 1, wherein the load balancer and the client are in the same metropolitan area.

3. A method according to claim 1, wherein the load balancer and the client are in the same local area network.

4. A method according to claim 1, wherein the one or more parameters comprise at least one of a jitter, a round trip delay or a hop count.

5. A method according to claim 1, wherein the one or more parameters comprise a cost.

6. A method according to claim 1, wherein selecting the server comprises selecting, by a client-controlled load balancer, responsive to receiving identification of a virtual server requested by the client.

7. A method according to claim 6, wherein selecting the server comprises selecting, by a client-controlled load balancer, responsive to receiving a connection establishment request from the client.

8. A method according to claim 6, wherein providing the values for the one or more parameters comprises measuring at least one of the parameters.

9. A method according to claim 8, wherein measuring at least one of the parameters, for at least one of the paths, is performed before receiving the connection establishment request.

10. A method according to claim 8, wherein measuring at least one of the parameters for at least one of the paths is performed after receiving the connection establishment request.

11. A method according to claim 1, further comprising changing the destination IP address of packets received by the load balancer from the client, to an IP address of the selected server.

12. A method according to claim 1, further comprising changing the source IP address of packets received by the load balancer from the selected server.

13. A method according to claim 1, further comprising transmitting an IP address of the selected server to the client.

14. A method according to claim 13, wherein transmitting the IP address of the selected server to the client comprises transmitting a DNS response.

15. A method according to claim 1, wherein ones of the plurality of servers are located in different geographical regions.

16. A method according to claim 1, wherein selecting a server to provide data for the client comprises selecting, by the load balancer, a second load balancer which is to perform the server selection and selecting, by the second load balancer, a server to provide data for the client.

17. A method according to claim 1, wherein the virtual server hosts a web site.

18. A method according to claim 1, wherein selecting a server to provide data for the client comprises selecting a server which minimizes a function of the one or more parameters.

19. A method according to claim 18, wherein selecting a server to provide data comprises choosing a function of the one or more parameters to be minimized and selecting a server which minimizes the chosen function.

20. A method according to claim 19, wherein the function is chosen responsive to a protocol with which the virtual server is accessed.

21. A method according to claim 19, wherein the function is chosen responsive to the virtual server accessed.

22. A method according to claim 19, wherein the function is chosen responsive to an attribute of the client.

23. A method according to claim 19, wherein the function is chosen responsive to the time of the selection.

24. A method of selecting a server to be accessed, comprising:

receiving, by a load balancer, a message relating to a virtual server, hosted by a plurality of servers, and to a client desiring to receive data from the virtual server; and

selecting, by the load balancer, one of the plurality of servers to provide data to the server,

wherein the load balancer is closer to the client than to the selected server, and

wherein the load balancer comprises a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters.

25. A method according to claim 24, wherein the load balancer is closer to the client than to any of the plurality of servers hosting the virtual server.

26. A method according to claim 24, wherein the load balancer is in the same metropolitan area as the client.

27. A method according to claim 24, wherein the load balancer is in the same local area network as the client.

28. A method according to claim 24, wherein the load balancer is not associated with the virtual server.

29. A method according to claim 24, wherein the load balancer is under control of a system manager of the client.

30. A method according to claim 24, wherein receiving the message comprises receiving a DNS query message.

31. A method according to claim 24, wherein receiving the message comprises receiving from a DNS server.

32. A method according to claim 24, wherein receiving the message comprises receiving a connection establishment request directed to the virtual server.

33. A method according to claim 24, wherein receiving the message comprises receiving a message directed to the load balancer.

34. A method according to claim 24, wherein selecting one of the servers comprises selecting a server which has a lowest monetary cost path to the load balancer.

35. A method according to claim 24, wherein selecting one of the servers comprises selecting a server which has a lowest delay path or a highest packet size path to the load balancer.

36. A method according to claim 24, wherein the load balancer is geographically closer to the client than to the selected server.

37. A method of selecting a server to be accessed, comprising:

receiving, by a load balancer, a message relating to a virtual server, hosted by a plurality of servers, and to a client desiring to receive data from the virtual server; and

selecting, by the load balancer, one of the plurality of servers to provide data to the client, at least partially responsive to the cost of communications between the client and one or more of the plurality of servers,

wherein the load balancer comprises a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server based on said one or more parameters.

38. A method according to claim 37, wherein selecting one of the servers comprises selecting a server under a constraint that a lowest monetary cost client communication connection is used in connecting to the server.

39. A method according to claim 37, wherein selecting one of the servers comprises selecting a server which minimizes a weighted sum of communication monetary costs to the server and at least one other route related parameter.

40. A method according to claim 39, wherein selecting one of the servers comprises selecting a server which minimizes a weighted sum of the communication costs to the server and the round trip delay to the server.

41. A load balancer, comprising:

an interface adapted to receive server access messages from clients; and

a processor adapted to determine, for at least one of the messages, whether the message requires load balancing responsive to at least one attribute different from the identity of the server referenced by the message, and to select for at least one message determined to require load balancing, a server to service the client,

wherein the processor comprises a client-controlled processor that directly selects the server to service the client based on the at least one attribute.

42. A load balancer according to claim 41, wherein the at least one attribute comprises the time at which the message is received at the interface.

43. A load balancer according to claim 41, wherein the at least one attribute comprises the identity of the client.

44. A load balancer according to claim 41, wherein the at least one attribute comprises a protocol to govern the communication with the server.

45. A load balancer according to claim 41, further comprising a packet changing unit adapted to change the contents of at least one field of packets belonging to connections for which load balancing was performed.

46. A load balancer according to claim 41, wherein the packet changing unit is adapted to change packets in accordance with half NAT or full NAT procedures.

47. A method of selecting a server to be accessed, comprising:

receiving, by a load balancer, a message relating to a virtual server, hosted by a plurality of servers, and to a client desiring to receive data from the virtual server;

choosing a function from a plurality of predetermined functions utilized by the load balancer for selecting servers, responsive to the received message; and

selecting, by the load balancer, one of the plurality of servers that minimizes or maximizes the chosen function, to provide data to the client,

wherein the load balancer comprises a client-controlled load balancer that directly selects said one of the plurality of servers representing the virtual server that minimizes or maximizes the chosen function.

48. A method according to claim 47, wherein choosing the function comprises choosing responsive to an identity of the client.

49. A method according to claim 47, wherein choosing the function comprises choosing responsive to a time at which the message is received.

50. A method according to claim 47, wherein at least two of the predetermined functions depend on different groups of one or more parameters.

51. A method according to claim 47, wherein at least two of the predetermined functions depend on the same parameters but give different weight to one or more of the parameters on which they depend.

IX. EVIDENCE APPENDIX

Provided below are assignment data for the present application and the allegedly APA Serial No. 09/793,455:

Assignments on the Web > **Patent Query**

Patent Assignment Abstract of Title

NOTE:Results display only for issued patents and published applications. For pending or abandoned applications please consult USPTO staff.

Total Assignments: 1

Patent #: NONE **Issue Dt:** **Application #:** 10072364 **Filing Dt:** 02/06/2002

Publication #: US20030149755 **Pub Dt:** 08/07/2003

Inventor: Emek Sadot

Title: Client-controlled load balancer

Assignment: 1

Reel/Frame: 012586/0847 **Recorded:** 02/06/2002 **Pages:** 4

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: SADOT, EMEK **Exec Dt:** 12/18/2001

Assignee: AVAYA COMMUNICATION ISRAEL LTD.
ATIDIM TECHNOLOGIES PARK-BLDG. 3
TEL AVIV, ISRAEL 61131

Correspondent: DOCKET ADMINISTRATOR
BRIAN K. DINICOLA
ROOM 1L-202
101 CRAWFORDS CORNER ROAD-P.O. BOX 629
HOLMDEL, NEW JERSEY 07733-3030

Search Results as of: 10/05/2006 09:48 AM

If you have any comments or questions concerning the data displayed, contact PRD / Assignments at 571-272-3350.

Web interface last modified: July 26, 2006 v.1.10

| HOME | INDEX | SEARCH | eBUSINESS | CONTACT US | PRIVACY STATEMENT

Assignments on the Web > Patent Query

Patent Assignment Abstract of Title

NOTE:Results display only for issued patents and published applications. For pending or abandoned applications please consult USPTO staff.

Total Assignments: 2

Patent #: NONE **Issue Dt:** **Application #:** 09793455 **Filing Dt:** 02/26/2001

Publication #: US20020120743 **Pub Dt:** 08/29/2002

Inventors: Lior Shabtay, Dan Beiser, Ofir Friedman, Eyal Amitai, Guy Kronental

Title: Splicing persistent connections

Assignment: 1

Reel/Frame: 011595/0964 **Recorded:** 02/26/2001 **Pages:** 3

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignors: AMITAI, ETAL **Exec Dt:** 02/12/2001

BEISER, DAN **Exec Dt:** 02/13/2001

FRIEDMAN, OFIR **Exec Dt:** 02/07/2001

KRONENTAL, GUY **Exec Dt:** 02/11/2001

SHABTAY, LIOR **Exec Dt:** 02/06/2001

Assignee: AVAYA COMMUNICATION ISRAEL LTD.
ATIDIM TECHNOLOGIES PARK - BLDG. 3
TEL AVIV, ISRAEL 61131

Correspondent: THOMAS J. BEAN
DOCKET ADMINISTRATOR
RM 1L-202
101 CRAWFORDS CORNER ROAD, P.O. BOX 629
HOLMDEL, NEW JERSEY 07733-3030

Assignment: 2

Reel/Frame: 012759/0141 **Recorded:** 04/09/2002 **Pages:** 5

Conveyance: SECURITY AGREEMENT

Assignor: AVAYA TECHNOLOGY CORP. **Exec Dt:** 04/05/2002

Assignee: BANK OF NEW YORK, THE
5 PENN PLAZA, 13TH FLOOR
NEW YORK, NEW YORK 10001

Correspondent: DOCKET ADMINISTRATOR
PAUL GARDON

101 CRAWFORDS CORNER RD.
P.O. BOX 629
HOLMDEL, NJ 07733-3030

Search Results as of: 10/05/2006 09:44 AM

If you have any comments or questions concerning the data displayed, contact PRD / Assignments at 571-272-3350.

Web interface last modified: July 26, 2006 v.1.10

X. RELATED PROCEEDINGS APPENDIX

None